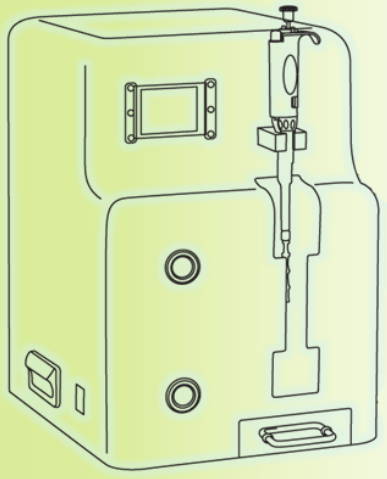
INTEGRATED iSBS

Sample Banking System



User Manual

Version MD_OUT_12_12_26_004_U

MicroDigital Co., Ltd.
#A-101, Korea Bio Park B/D, 694-1, SamPyung-Dong,
BunDang-Gu, SungNam-Si, GyungGi-Do, 463-400, Korea
Tel : +82-31-628-2200 / Fax : +82-31-628-2222
info@md-best.com / www.MD-Best.com

microdigital

1. Warning & Caution

⚠ Warning

DO NOT operate the instrument close to any sensitive electronic instruments.
The recommended minimum safety distance is 1.2m (4ft)
iSBS MD-Si2 generates Radio Frequency (RF) power to seal VacTube®.
Be cautious of potential electric shock or hazard.

- Do not operate the instrument without proper operation training given by the supplier.
- Do not open the cover in any case. Otherwise the warranty will be void.
- Do not spray or litter liquid material onto the instrument.
- Always turn the power off before cleaning the instrument.
- Do not seal any other plastic tubing except supplied VacTube®.

Caution

1) Potential Bio-Hazard Material

iSBS MD-Si2 seals VacTube® designed to contain potentially bio-hazard materials. Please be aware of the dangers of the bio-matters. They might be peril to your health. Always use bio-safe gloves while handling bio-materials. In case you are exposed to the bio-materials, get medical assistance right away.

2) Mobile Electronics Malfunction

iSBS MD-Si2 generates RF powers. It may cause malfunction of the mobile electronics such as cellular phones. Please be aware of the use of mobile phones while sealing at your own risks.

3) Cleaning

Always keep the sealing electrodes clean and dry. If the sealing electrodes get wet or dirty, arcs may appear during the sealing process and you will not process proper sealing. If arcs appear, clean the sealing electrodes and let them dry thoroughly.

4) Maintenance

Use a soft cloth to clean the instrument. You may use alcohol with it. After cleaning, wait for it to be completely dry. Do not use Paint Thinner, Benzene, Solvent or any Strong Detergent.

5) Copy Rights

DO NOT make any illegal copy of this Manual without prior permission from MicroDigital Co., Ltd.

Table of Contents

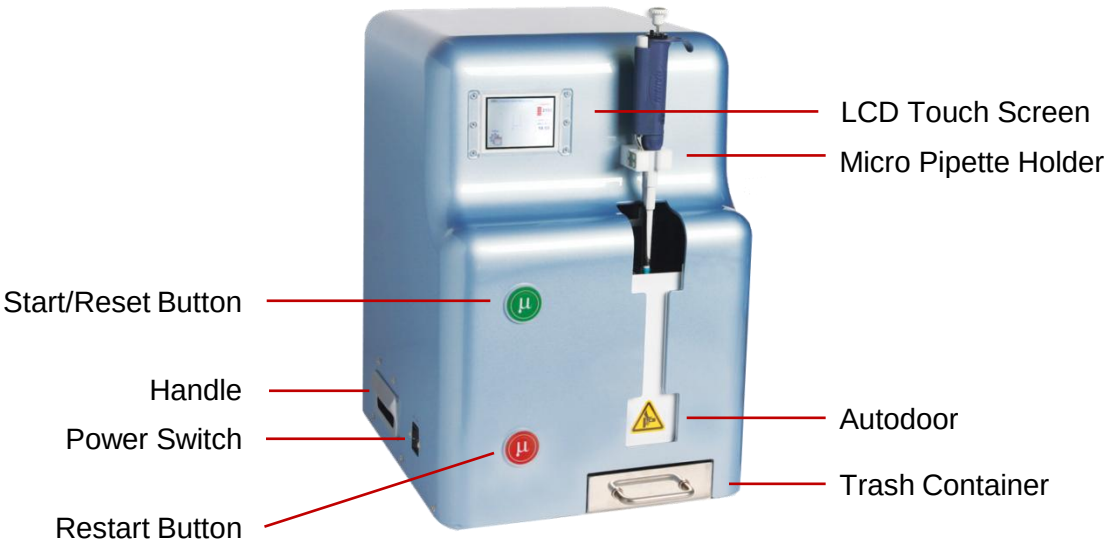
2. System Structure

2-1 Standard System Components

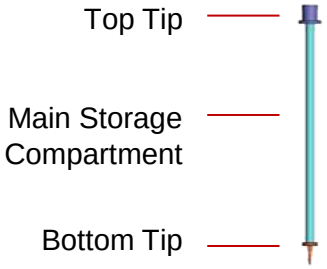
1) Instrument: iSBS MD-Si2
2) Power Cord
3) Trash Container
4) Sterilized Standard VacTube®
5) VacTube® Box
6) Micro Pipette (Not Provided)
7) Extractors (Optional)

2-2 Instrument: iSBS MD-Si2 – Reference to Figure 1

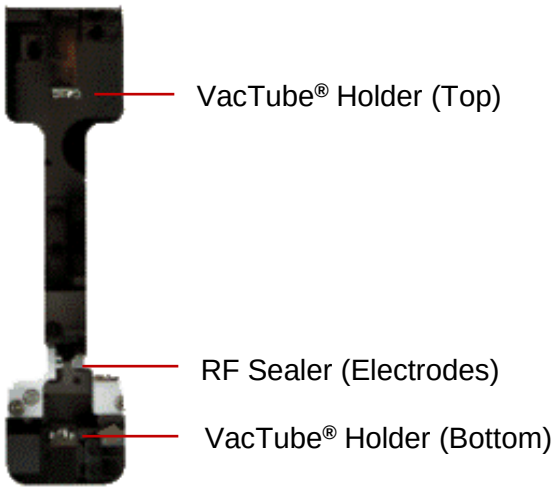
LCD Touch Screen	Displays the real-time instrument status and allow two way communications to users by simple touch on the LCD screen. You can perform functions such as setting the number of segments.
Start / Reset Button	The green button on the front of iSBS. Initiate the programmed multi-point vacuum-like-sealing (VLS®). For the purpose of "Reset", check Chapter 5.
Restart Button	The red button located below the "Start / Reset Button" touch Restart button when the LCD displays "Press restart" during processing.
Handles	Use handles to manipulate the instrument.
Trash Container ★ **Important!**	Designed to contain the liquid sample drops from the first sealing of each seal. We recommend to cover up the trash containment with disposable vinyl cover for your own hygienic and safety.
Pipette Holder	Holds the pipette from tipping down.
Autodoor	To prevent any interruptions while sealing.
VacTube® holders (Top & Bottom)	Designed to hold the VacTube® during the sealing process. **Inserting** VacTube® into the instrument: insert the bottom part of the VacTube® into the bottom holder first then, place the top part of the VacTube® onto the top holder. **Taking** out VacTube® from the instrument: pull out the VacTube®



<Instrument>



<VacTube®>



<VacTube® Entrance>

Figure 1: iSBS MD-Si2 & VacTube®

3. Quick Setup & Simple Operation

Step 1	**Instrument (iSBS MD-Si2) & Accessories:**
	The system consists of 1 Instrument, 1 Power Cord, 1 Trash Container, 1 User Manual.
Step 2	**Where to install the instrument?**
	Place the instrument onto the flat and even surface such as table, and etc.
Step 3	**Power Cord connection**
ⓘ	Connect the instrument to electricity using provided Power Cord. **Caution:** Do not share the power outlet with other electronic machines.
Step 4	**Power On**
★	Turn on the Power Switch located on the left side of the instrument. When the power is on, the instrument will automatically carry out Initialization. **Important:** Before proceeding to the VacTube® sealing, make sure that LCD displays the main screen.
Step 5	**Setup the Number of Segments**
	Set the number of segments in the 'Segment setup' section. For detailed information on how to set up the number of segments, please go to Chapter 4.
Step 6	**Tube in & Operation**
	When you are to make multi-point Vacuum-Like-Sealing(VLS®) by using the supplied VacTube®, please follow the detailed procedure below.
6.1	Plug a micro pipette onto the top of a VacTube®.
6.2	Insert the tip of the VacTube® into the liquid sample.
ⓘ	**Caution:** Make sure the outside of main compartment of VacTube® does not touch any liquid samples. Otherwise, it may cause an electric spark (arc) while sealing.
6.3	Insert the liquid sample into the VacTube® using a pipette attached to it.
6.4	Insert the VacTube® into the instrument with the pipette attached, and place the pipette to the Micro Pipette Holder on the front side of the instrument. Make sure to place the pipette firmly.
6.5	Touch Start button to proceed the vacuum-sealing. When the Start button is touched, the Autodoor will automatically shuts from left to right to prevent any interruptions while sealing. Autodoor shuts very lightly, therefore it is completely safe; however it will stop the process if something is in its way while it is closing.
★	**Important:** Make sure there is nothing while the "Autodoor" closes.
★	**Important:** When you touch the "Start", make sure the button twinkles a light.
★	**Important:** While processing the programmed sealing, LCD displays "Processing".

Step 7	**Tube Out**
	Once the sealing is completed and the Autodoor is open, LCD screen will displays "Completed," then you may take out the VacTube® from the instrument.
Step 8	**Cutting & Marking**
8.1	Save the main segments and cut & dispose of the unnecessary parts.
8.2	Label the VacTube® and register the data of the vacuum-sealed sample into SBMS.
8.3	Store main segments to the provided VacTube® Box
Step 9	**Ready for The Next Sealing**

4. LCD Touch Screen

4-1 Main Screen

As shown in the Figure 1, Touch Screen is located upper left corner on the front side of the instrument. When the instrument is turned on, Touch Screen will show the process of initialization.

Main Screen will be displayed after the initialization is completed.
Main Screen contains following features:

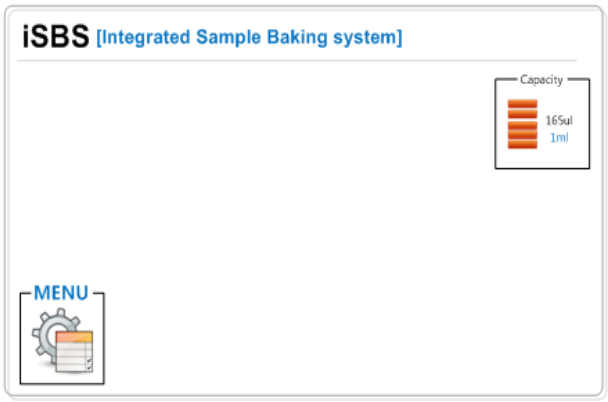


Figure 2: Touch Screen Main Frame

- MENU: For setting the number of segments for next sealing, and checking the information of current instrument.
- Capacity: For displaying current setting for the number of segments and the capacity for each segment.

4-2 How to Setup the Number of Segments

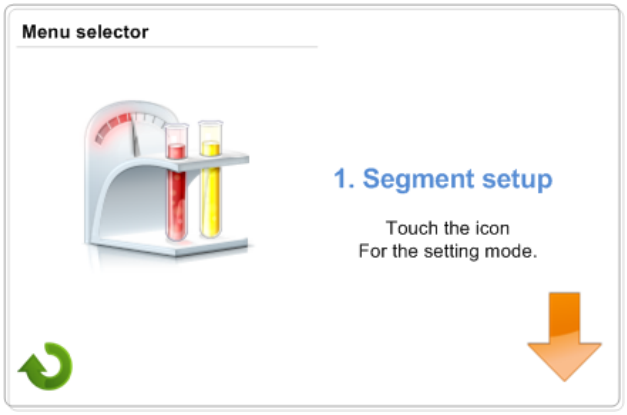


Figure 3: Segment setup

a. Touch “MENU” icon located bottom left corner on the Touch Screen, then "Menu selector“ screen will be displayed as Figure 3.

b. Touch the icon () to proceed the setup.

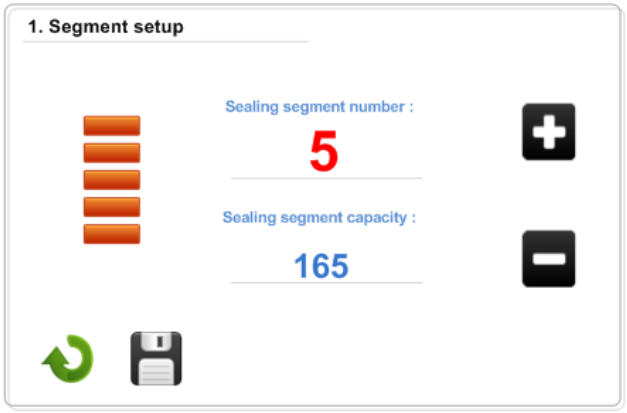


Figure 4: Segment setup Screen 1/2

c. When the "Segment setup" page is displayed as above, you can select the number of segments by touching ➕ and ➖ icon up to 5 segments. You may also check the "Sealing segment capacity" for each segment while setting the number.

d. After choosing the number of your segments, save the setting by touching 💾 icon in order to apply the setting for your next sealing. When it is saved the icon turns into ✔ as Figure 5.

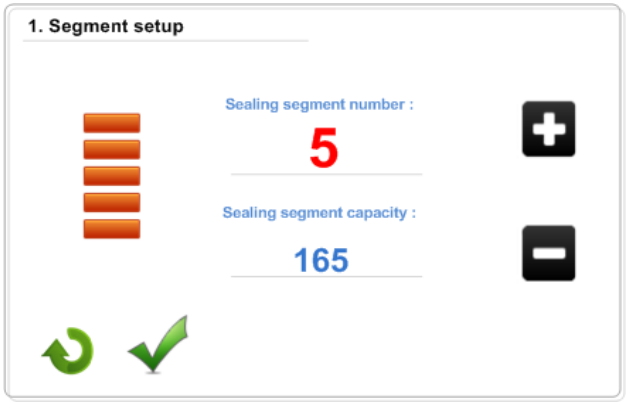


Figure 5: Segment setup Screen 2/2

e. Touch icon to go back to "Menu selector" screen.

5sgmt: 165㎕x5=825㎕	4sgmt: 205㎕x4=820㎕
3sgmt: 280㎕x3=840㎕	2sgmt: 425㎕x2=850㎕
1sgmt: 875㎕x1=875㎕	

★ **Important:** Starting from the very bottom of the VacTube®, the segments before the last segment are valid ones. Do not use or try to validate the bottom and end tips, and last segment. Although it looks valid, the last segment may be oxidized or already contaminated.

★ **Important:** The total quantity of liquid sample per each VacTube® depends on the number of segments.

Caution: When you seal VacTube® with default setting, the equipment will automatically seals 7 places on the VacTube® starting from the bottom. With the default setting, you will get 5 valid segments. Each segment contains approximately 165 ㎕ of liquid sample.

4-3 System Information

a. In order to check the System Information, touch the MENU icon and select "System info" from "Menu selector" page.

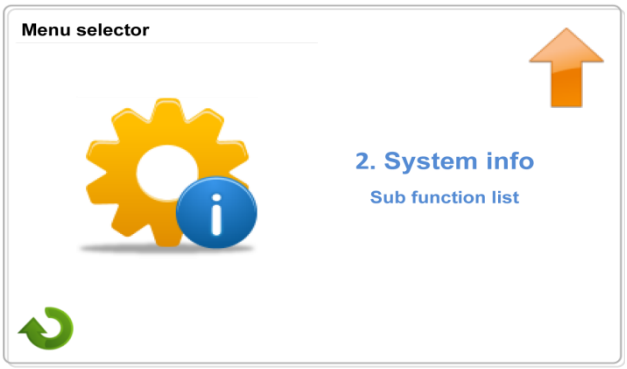


Figure 6: Segment info

b. Touch the icon ( ) and proceed to "System information" page.

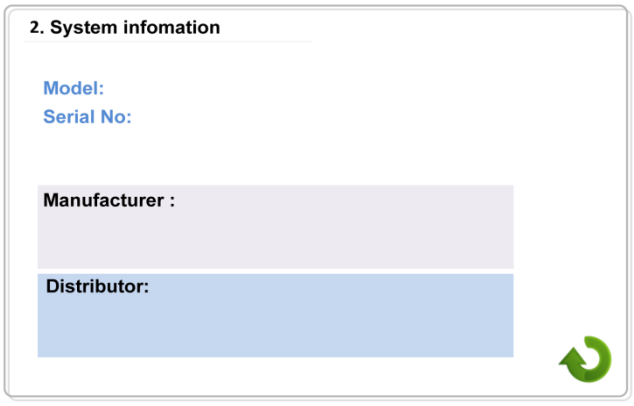


Figure 7: Segment info Screen

c. You may check the system information such as Model & Serial No., Manufacturer, and Distributor. You require such information for After Service and Upgrades.

d. Touch icon to go back to "Menu selector" screen.

5. Trouble Shooting Guide

5-1 Warning Messages

a. TUBE NOT INSTALL

Figure 8: Warning (Tube fail)

- The warning occurs when the tube is inserted to iSBS improperly or not inserted at all. Check and adjust the tube's position right in the instrument or insert a tube. Then touch the "Restart" button to continue the process.
- If you want to skip one sealing and start from next sealing point, touch and hold “Start/Reset” button for 3 seconds. If you want to cancel the process, touch and hold "Start/Reset" button for 10 seconds.

b. SEALING FAIL

Figure 9: Warning (Sealing fail)

- The warning occurs when there is an error in the sensor or RF Power. Check and adjust the tube's position properly, and touch "RESTART" button to continue the process.
- If you want to skip one sealing and start from next sealing point, touch and hold “Start/Reset” button for 3 seconds. If you want to cancel the process, touch and hold "Start/Reset" button for 10 seconds.

c. AUTODOOR FAIL

Figure 10: Warning (Autodoor fail)

- The warning occurs when there is an error in the sensor or RF Power. Check and adjust the tube's position properly, and touch "RESTART" button to continue the process.
- If you want to skip one sealing and start from next sealing point, touch and hold “Start/Reset” button for 3 seconds. If you want to cancel the process, touch and hold "Start/Reset" button for 10 seconds.

No.	Trouble	Answer
1	No power or No LCD light is on.	Check the power cord connection. Also check whether the power switch is "ON." (Switch is located on the left side of the instrument)
2	After turning the Power ON, the instrument doesn't do initialization or display initialization message.	Reset the power switch located at the left side of the instrument. (A temporary power surge may cause this.)
3	Message displayed on the LCD monitor doesn't match the actual instrument status.	Reboot the instrument (Power off-on). If this problem continues, contact the manufacturer.
4	After initialization, the first few sealing is too weak or too thin.	Wait for a few minutes and try to seal again. (Since the instrument is very sensitive to the temperature and the moisture, let it cool down)
5	During the sealing process, a breakdown of the VacTube® is observed.	Try to seal with other VacTube®. If the problem continues, contact the manufacturer.
6	Arc is observed during the sealing process.	Arc may appear due to the moisture on the VacTube® exterior. Make sure that VacTube® and the instrument are fully dry at all time.
7	No response after touching Start/Reset or Restart button.	Make sure that you see the light on the buttons when Start or Restart button is touched. In case you don't see the lights, reboot the instrument. If the problem continues, contact the manufacturer.
8	Autodoor doesn't close.	Please reboot the instrument. If the problem continues, contact the manufacturer.
9	Error occurs during the sealing.	When there is an error, Autodoor will automatically be opened. Follow the instructions on errors and correct them. If the problem continues, contact the manufacturer.

6. Instrument Specification & Warranty

Dimension	330mm x 420mm x 480mm
Weight	28 Kg
Ambient Temperature	18 - 28 ℃
Maximum Humidity	80 %
Voltage	110-240V / 50-60 Hz
Power Consumption	Idle: 90 Watt Sealing: 300 Watt
Instrument Software	Version: 3.7.1 (Software can be upgraded in future for better performance)
Warranty	1 year after installation (Make sure to register to local distributor or manufacturer)

Manufactured by **MicroDigital Co., Ltd**

#A-101, Korea Bio Park B/D, 694-1, SamPyung-Dong,
BunDang-Gu, SungNam-Si, GyungGi-Do, 463-400, Korea

Tel. +82-31-465-7140 / Fax. +82-31-465-7142